REMARKS

Favorable reconsideration, reexamination, and allowance of the present patent application are respectfully requested in view of the following remarks. Claim 6 has been amended to correct a simple typographical error.

Information Disclosure Statement (IDS)

Applicant notes that, on 5 September 2004, an IDS was filed in this application. Applicant respectfully requests consideration of all of the documents cited therein, and return to Applicant of a copy of the Examiner-initialed PTO-1449.

Rejection under 35 U.S.C. § 102

In the Office Action, beginning at page 2, Claims 1-5 and 7-9 were rejected under 35 U.S.C. § 102(b), as reciting subject matters that allegedly are anticipated by U.S. Patent No. 6,126,439, issued to Knöpfel et al. ("Knöpfel"). Applicant respectfully requests reconsideration of this rejection.

The present application describes burners for, e.g., a heat generator. Based on a generic burner, which includes a swirl generator 1, a mixing section 7, and a combustion chamber 2, exemplary burners which embody principles of the present invention include a cavity 3 between the swirl generator 1 and the combustion chamber 2. In such an exemplary burner, a main stream 6 of fuel and air flows from the swirl generator 1 via mixing section 7 into the combustion chamber 2. The cavity 3 is arranged in such a way that a secondary flow 10 can be formed therein and this secondary flow 10 encloses the main flow 6.

Claim 1 relates to a burner having a combination of elements including, *inter alia*, a swirl generator for a combustion-air flow and means for injecting fuel for producing a main flow, a combustion chamber arranged downstream of the swirl generator, and a cavity arranged between the swirl generator and the combustion chamber, in which cavity a secondary flow can be produced that encloses the main flow.

Claim 7 relates to a pilot burner having a combination of elements including, *inter alia*, a

cavity arranged between a swirl generator and a combustion chamber and in which a secondary flow can be produced.

The prior art, including *Knöpfel*, fails to identically disclose or describe combinations as recited in the pending claims.

The burner according to *Knöpfel*, see Figs. 1 and 2, is based on the same generic burner as described above, namely: a swirl generator 10, a mixing section 20, and a combustion chamber 30. The main stream of fuel and air 23 flows from the swirl generator 10 via the mixing section 20 into the combustion chamber 30. Fig. 2, a transverse cross-sectional illustration through the swirl generator 10, shows a typical double-cone swirl generator configuration, similar to that described in present specification (see page 1), and not a cavity between a swirl generator and a combustion chamber as alleged in the Office Action. *Knöpfel* describes a fuel nozzle 17 located in the swirl generator 10, and air throughflow openings 22 in the mixing tube 20 to inhibit flashback in the mixing tube. See col. 4, lines 53-63. Whatever other useful structures *Knöpfel* may describe, *Knöpfel* fails to describe a cavity for forming a secondary flow, enclosing the main flow from the swirl generator, as recited in the combinations of the pending claims.

The Office Action cites to col. 4, lines 1-36 of *Knöpfel* to allegedly describe portions of the claimed combinations. On the contrary, however, *Knöpfel* describes only the swirl generator 10. Nowhere in the passages indicated in the Office Action, much less the rest of *Knöpfel*, are describes structures as recited in the pending claims, including a cavity between a swirl generator and a combustion chamber. The additional reference in the Office Action to col. 3, line 29, adds nothing, as this passage in *Knöpfel* merely generally defines the swirl generator 10, the mixing section 20, and the combustion chamber 30; *Knöpfel* is entirely silent about any structure being "toroidal".

Mixing section 20 of *Knöpfel* is clearly a tube, and is not toroidal: from Fig.1 and col.4, lines 40-42, of *Knöpfel*,

> which mixing section (20) is attached on the downstream side of the swirl generator and

essentially comprises a mixing tube (21)

Knöpfel clearly fails to describe structures recited in the pending claims. As discussed above, *Knöpfel* describes only a centrally arranged fuel nozzle 17.

Accordingly, the Office Action fails to make out a *prima facie* case that *Knöpfel* describes a device including each and every element recited in the combinations of Claims 1-5 and 7-9. *Knöpfel* therefore cannot anticipate the subject matters of these claims.

For at least the foregoing reasons, Applicant respectfully submits that the subject matters of Claims 1-5 and 7-9 are not anticipated by *Knöpfel*, are therefore not unpatentable under 35 U.S.C. § 102, and therefore respectfully requests withdrawal of the rejection thereof under 35 U.S.C. § 102.

Rejection under 35 U.S.C. § 103(a)

In the Office Action, beginning at page 3, Claim 6 was rejected under 35 U.S.C. § 103(a), as reciting subject matter that allegedly is obvious, and therefore allegedly is unpatentable, over *Knöpfel* in view of the disclosure of U.S. Patent No. 6,056,538, issued to Büchner et al. ("Büchner"). Applicant respectfully requests reconsideration of this rejection.

As discussed above, *Knöpfel* fails to anticipate the subject matter of Claims 1-5 and 7-9. *Büchner* discloses a burner with a pilot flame device. *Büchner*'s pilot flame is not formed by a secondary flow from a cavity between a swirl generator and a combustion chamber, but is instead formed in the swirl generator by a partial stream of the main flow of fuel and air. Thus, *Büchner* teaches away from the subject matters of the pending claims, and fails to make up for the deficiencies of *Knöpfel* with respect to the subject matters of the pending claims. Stated somewhat differently, assuming *arguendo* that the hypothetical combination of *Knöpfel* with *Büchner* was not made with the benefit of an impermissible hindsight reconstruction of the claimed subject matter from Applicant's own specification, the resulting construct would still not include each and every element recited in the combinations of the pending claims.

For at least the foregoing reasons, Applicant respectfully submits that the subject matter

of Claim 6, taken as a whole, would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention, is therefore not unpatentable under 35 U.S.C. § 103(a), and therefore respectfully requests withdrawal of the rejection thereof under 35 U.S.C. § 103(a).

Conclusion

Applicant respectfully submits that the present patent application is in condition for allowance. An early indication of the allowability of this patent application is therefore respectfully solicited.

If Mr. Gravini examiner believes that a telephone conference with the undersigned would expedite passage of this patent application to issue, he is invited to call on the number below.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. If, however, additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is hereby authorized to charge fees necessitated by this paper, and to credit all refunds and overpayments, to our Deposit Account 50-2821.

Respectfully submitted,

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